

**Amendments to the Specification:**

Please replace the abstract of the disclosure beginning on page 137, with the following rewritten paragraph:

-- A method, apparatus, and computer instructions in a data processing system for processing instructions are provided. Instructions are received at a processor in the data processing system. If a selected indicator is associated with the instruction, counting of each event associated with the execution of the instruction is enabled. The performance indicators and counter values may be used as a mechanism for identifying cache hits and cache misses. Performance counters are incremented each time the instructions of routines of interest are executed and each time the instructions must be reloaded into the cache. From the values of these counters the cache hit-miss ratio may be determined. When the cache hit-miss ratio becomes less than a predetermined threshold, i.e. ~~there is a~~ greater number of cache misses than cache hits, the present invention may determine that a problem condition has occurred and initiate "chase tail" operations for avoiding overwriting of entries in the cache. --

Please replace the paragraph beginning on page 1, with the following rewritten paragraph:

-- The present invention is related to the following applications entitled "Method and Apparatus for Counting Instruction Execution and Data Accesses", serial no. [[ \_\_\_\_\_ ]] 10/675,777, attorney docket no. AUS920030477US1, filed on September 30, 2003; "Method and Apparatus for Selectively Counting Instructions and Data Accesses", serial no. [[ \_\_\_\_\_ ]] 10/674,604, attorney docket no. AUS920030478US1, filed on September 30, 2003; "Method and Apparatus for Generating Interrupts Upon Execution of Marked Instructions and Upon Access to Marked Memory Locations", serial no. [[ \_\_\_\_\_ ]] 10/675,831, attorney docket no. AUS920030479US1, filed on September 30, 2003; "Method and Apparatus for Counting Data Accesses and Instruction Executions that Exceed a Threshold", serial no. [[ \_\_\_\_\_ ]] 10/675,778, attorney docket no. AUS920030480US1, filed on September 30, 2003; "Method and Apparatus for Counting Execution of Specific Instructions and Accesses to Specific Data Locations", serial no. [[ \_\_\_\_\_ ]] 10675,776, attorney docket no. AUS920030481US1, filed on September 30, 2003; "Method and Apparatus for Debug Support for Individual Instructions and Memory Locations", serial no. [[ \_\_\_\_\_ ]] 10/675,751, attorney docket no. AUS920030482US1, filed on September 30, 2003; "Method and Apparatus to Autonomically Select Instructions for Selective Counting", serial no. [[ \_\_\_\_\_ ]] 10/675,721, attorney docket no. AUS920030483US1, filed on September 30, 2003; "Method and Apparatus to Autonomically Count

Instruction Execution for Applications”, serial no. [[\_\_\_\_]] 10/675,642, attorney docket no. AUS920030484US1, filed on September 30, 2003; “Method and Apparatus to Autonomically Take an Exception on Specified Instructions”, serial no. [[\_\_\_\_]] 10/675,606, attorney docket no. AUS920030485US1, filed on September 30, 2003; “Method and Apparatus to Autonomically Profile Applications”, serial no. [[\_\_\_\_]] 10/675,783, attorney docket no. AUS920030486US1, filed on September 30, 2003; “Method and Apparatus for Counting Instruction and Memory Location Ranges”, serial no. [[\_\_\_\_]] 10/675,872, attorney docket no. AUS920030487US1, filed on September 30, 2003; “Method and Apparatus for Maintaining Performance Monitoring Structures in a Page Table for Use in Monitoring Performance of a Computer Program”, serial no. [[\_\_\_\_]] 10/757,250, attorney docket no. AUS920030488US1, filed on [[\_\_\_\_]] January 14, 2004; and “Method and Apparatus for Optimizing Code Execution Using Annotated Trace Information Having Performance Indicator and Counter Information”, serial no. [[\_\_\_\_]] 10/757,197, attorney docket no. AUS920030556US1, filed on [[\_\_\_\_]] January 14, 2004. All of the above related applications are assigned to the same assignee, and incorporated herein by reference.--